

REMARKS/ARGUMENTS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks. Claims 1-9, 11-15 and 17 are in the application. Claims 1 and 15 have been amended. No new matter has been added.

Applicants appreciate the Examiner's courtesy during the telephone interview with the undersigned on April 5, 2011. The substance of the interview is contained in the remarks below.

The Examiner rejected claims 1-5, 15 and 17 under 35 U.S.C. §103(a) as being unpatentable over *Taylor et al. U.S. Patent No. 3,901,425* in view of *Jeannette U.S. Patent No. 3,384,778*, *Ueyama et al. U.S. Patent No. 4,102,483*, and *Bryce et al. U.S. Patent No. 4,187,411*. The remaining claims are rejected under 35 U.S.C. 103(a) as being unpatentable over *Taylor et al.* in view of *Jeanette, Ueyama et al.*, *Bryce et al.* and further in view of *Tomiyasu et al. U.S. Patent Application Publication No. 2005/0150883* (claim 6), *Parmelee et al. U.S. Patent No. 4,731,518* (claims 8-9), *Strybel U.S. Patent No. 4,458,719* (claims 11-12), *Huisman et al. U.S. Patent No. 7,165,707* (claim 13), or *Savard et al. U.S. Patent No. 2,964,612* (claim 14). Applicants respectfully traverse.

Applicants have amended claims 1 and 15 to clarify that during backward movement of the welding torch, the welding wire with the welding core is pushed back into the hose without displacement of the welding wire within the welding core. Support for this amendment can be found in the specification on page 4, first full paragraph.

Thus, during reversal of the direction of conveyance of the welding wire, the welding wire can be easily and quickly stored in the spirally or helically wound hose. The welding wire does not have to be pushed back through the welding core, as the welding core together with the wire is pushed into the hose, and the larger helical shape of the hose absorbs the additional amount of core/wire that is pushed through it, as can be seen in FIGS. 5 and 6 of the present application.

Taylor et al. (US 3,901,425) does not show a wire buffer storage in the sense of the present patent invention, which enables the temporarily storage of certain amounts of welding wire during a reversal of the running direction of the welding wire. Reference number 16 of *Taylor et al.* depicts a flexible cable assembly which connects a portable gun assembly 18 with a wire feed welding apparatus 10 over longer distances. The wire moving apparatus according to *Taylor et al.* should enable the movement of the welding wire efficiently through the flexible

cable 16 over longer distances and substantially reduce the sliding friction and the possibility of stretching, buckling or bird-nesting, especially during start-up procedures. During the welding process, the welding wire should be moved at a constant velocity. Reference number 96 depicts a rotating sheath, and not a wire guide hose as interpreted by the Examiner. The rotating sheath 96 is connected to a drive assembly 64 (see FIG. 3 of *Taylor et al.*) to drivingly rotate the flexible cable assembly 16 and to create random vibration within the cable assembly 16 for reducing sliding friction between the welding wire 12 and the liner 98 within the flexible cable assembly 16. There is no necessity to store certain amounts of welding wire 12 within the flexible cable assembly 16. The welding wire 12 within the flexible cable assembly 16 or the liner 98 should be conveyed with reduced friction. Therefore, it is intended not to contact the liner 98 with the welding wire 12.

Further, *Taylor et al.* does not disclose a reversal of the rotation of the drive rollers 114 and 118 within the gun assembly 18 while the drive rollers 34 and 38 within the feed assembly 14 maintain a forward movement of the welding wire 12. Only in this case it would be necessary to store certain amounts of welding wire 12 within the flexible cable assembly 16 until the conveyance direction of the gun assembly 18 is reversed again.

Ueyama et al. simply discloses a method for feeding a welding wire from a wire reel to a welding torch, via a conduit cable 14. Although within the conduit cable 14 of *Ueyama et al.* the welding wire 10 itself is fed in a spiral state along the inner surface of the wire guide hose, the hose itself is not extending in a helix-shaped or spiral-shaped manner and arranged within the hose package or outside the hose package as shown in FIGS. 3-4 of Applicants' disclosure. In *Ueyama*, the hose is straight and the wire is spiral or sine-curved within the hose. As recited in claims 1 and 15 of the present invention, the welding wire 13 within the core is arranged to be freely movable within this wire guide hose, which is helix or spiral shaped. The wire guide hose extending in a helix-shaped or spiral-shaped manner will force the welding wire into the helix-shaped or spiral-shaped course, which is not the case in *Ueyama et al.*, where the welding wire is guided within the straight conduit cable 14. Using a strong material for the welding wire it will be hard to force the welding wire into a spiral-shaped course. When using a soft material for the welding wire, however, bending or folding of the welding wire, probably will result. *Jeannette* also fails to disclose a helix shaped hose with the core and wire inside it.

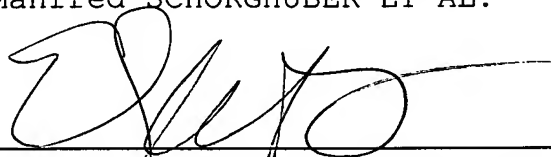
Bryce et al. (US 4,187,411) discloses an arc welding apparatus with a module 12 to monitor the stick out distance 11

of the welding wire 2. Bryce et al. does not disclose a buffer device for a welding wire and no sensor for detecting the filling level or quantity of welding wire within the wire buffer storage.

None of the cited references teach or suggest a welding wire inside a core that is passed through a helically wound hose such that the wire and core are freely movable within the hose and so that backward movement of the welding wire pushes the core and wire back into the hose. None of the cited references even mentions the possibility of backwards movement of the welding wire, or storage of excess wire within the hose. The shape of the hose and its larger diameter than the core allows the hose to absorb extra wire during this reverse movement. None of the cited references provide a structure that allows for this.

Accordingly, Applicants submit that the claims are patentable over all of the references, taken either singly or in combination. Early allowance of the claims is respectfully requested.

Respectfully submitted,
Manfred SCHÖRGHUBER ET AL.



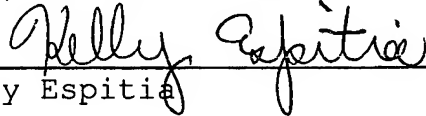
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